

REMARKS/ARGUMENTS

The applicants take note of the Examiner's having renumbered the claims as 106-160.

Objections have been made to the disclosure. Specifically, a phrase in paragraph [0044] is not understood. The applicants have accordingly deleted the phrase.

The specification has been objected to as failing to provide proper antecedent basis for the claimed subject matter. Specifically, claims 115, 126, 137 and 148 are said to be not supported by the specification. In response, the applicants have amended both the specification and the claims 115, 126, 137 and 148 so as to provide proper support.

The amendment filed 04/07/2005 has been objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. In response the applicants have amended paragraph [0096] in the specification to delete any new matter and have amended the claims to be consistent therewith.

In respect to the issue of new matter, the applicants believe that the method of calculation of the aspect ratio is sufficiently supported in the specification as filed. In particular, in paragraph [0059], lines 2 and 3, it is provided that "The protrusions 756... preferably have an aspect ratio, defined as the height of the protrusion 756 divided by the effective diameter of the protrusion 756...". Also in that paragraph, lines 10 and after, it is provided that "the aspect ratio is defined as the ratio of the effective height of the protrusions (i.e., the distance the protrusions 756 extend beyond the inner vessel bottom 732) to the effective diameter, which is the diameter of a circle having the same area as the rectangular cross section of the protrusions 756". Also, in paragraph [0060], line 4 and after, it is provided that "the effective diameter of the protrusions 756 is the diameter of a circle having the same area as the rectangular cross section".

With these recitations in the original specification, the method of calculation of the aspect ratio is clearly supported thereby. With regard to the particular calculations as now corrected in paragraph [0096], the values for the initial

calculation for an aspect ratio of 9.48 are provided in paragraph [0096] wherein it is provided that "The undulations... have a height H of about 0.55 inches". The values for the second calculation, wherein the height H equals .5 inches, are provided in paragraph [0040] wherein it is provided that "...for a height H which is about one-half inch in this embodiment" and in paragraph [0043] wherein it is provided that "...the height H of the fins being about one-half inch".

In view of the above explanation, the applicants believe that the application as now amended is fully supported by the original specification, and, accordingly, no new matter has been added.

Claims 106-128, 134-137 and 145-148 are rejected under 35 U.S.C. 112, second paragraph as being indefinite. Those claims have, accordingly, been amended to overcome the rejections.

Claims 106-160 are rejected under 35 U.S.C. 103(a) as being unpatentable over US000132793 (Barnes) in view of US004643164 (LaForge) and US002213376 (Benesh). In response, the applicants have reviewed those references in detail and believe that the present claims, as amended, are patentably distinctive thereover for the reasons to be discussed hereinbelow.

The present invention relates to a cooking vessel having a single thermally conductive member fixedly attached to its external bottom side, a top housing having top and bottom rims with the top rim being connected to the bottom of the vessel, and a bottom housing containing a burner and having a top ring that is couplable to the top housing bottom rim. In order to provide improved heat transfer efficiencies, the single thermally conductive member that is formed of a single aluminum strip is formed into adjacent downwardly extending protrusions with interconnecting segments therebetween. Its dimensions are selected so as to provide an aspect ratio which optimizes the heat transfer characteristics thereof. A single conductive member is attached to the external bottom by way of sonic welding. The bottom housing is so configured and sized as to be removable from said top housing and temporarily placed for storage in the vessel cavity.

The Barnes reference shows a gas heater having a frame b supporting a burner g thereabove, a plurality of brackets j supported by the frame b, and a ring or hoop i supported by the brackets j, with the brackets j also acting to support a cooking vessel or utensil on the top thereof. An annular ring h of twisted wire, wire gauze, iron cuttings or shavings rather non-flammable material appears to be placed on top of the ring or hoop i. Its purpose is to ensure an equal distribution of the heat produced by the jets.

The annular ring h is clearly not attached to a cooking vessel and may not even come in contact with the cooking vessel since such vessel could rest on the brackets j, and if the brackets j are slightly above the annular ring h, the ring h would not contact the cooking vessel. In this regard, there is no description or suggestion that the annular ring does contact the cooking vessel.. Thus, although the annular ring may assist in obtaining an equal distribution of heat, it would not provide the superior heat transfer properties of the present invention.

The LaForge reference shows a portable stove assembly comprised of a primary support member 12, a secondary support member 14 placed on top thereof, and an egg shaped reservoir 28 placed in the primary support member 12 with a tube 30 extending upwardly to a burner or nozzle 32 located in the secondary support member 14. The secondary support member 14 includes an annular side wall 19 whose top edge is adapted to support a cooking pot 16. Clearly there is no showing or suggestion of any type of heat transfer enhancement features that are attached to or used in connection with the cooking pot 16. The Examiner states that "The skirt (i.e. the primary support member) is separable from the base and the base is storable within the vessel". The applicants have reviewed the drawings and the specification and can find no support for this statement. Further, since the primary support member 12 appears to be of substantially the same diameter as the cooking pot 16, we do not believe that such a relationship exists.

The Benesh reference shows a heating vessel which includes a kettle 1 having a bottom wall 2 to which a plurality of individual, radially extending fins 4 and 5 are attached. Encircling the fins 4 and 5 and in good thermal contact with the

outer ends thereof is a base ring 8. Since the fins 4 and 5 are preferably made of a suitable material such as copper or aluminum having a high coefficient of heat and since they are preferably secured in good thermal contact, as by welding, to the bottom wall 2 and the base ring 8, provision is made to position the copper strips between two strips 11 and 12 of iron or steel, with the three strips then being welded together. The iron jacketed edges of the fin are then spot welded to the bottom wall 2. This is substantially different from the applicant's invention wherein a single aluminum strip is formed in a ring having a plurality of downwardly extending protrusions with interconnected segments, with the ring being positioned adjacent to and along the entire extent of a peripheral edge of the vessel external bottom side. In contrast, Benesh provides a plurality of individual fins that extend in the radial direction and have their radially outer ends connected to an iron ring 8. In this regard, the Examiner has said that Benesh teaches "fixedly attaching a single (i.e. – the thermally conductive elements are formed as a single unit) top housing side structure 8 and thermally conductive member (4, 10, 19, etc) to a vessel bottom wall (2)". Although the iron ring 8 and the thermally conductive members 4 and 5 may be described as a single element since they are all connected to the base ring 8, the applicants believe that it unreasonable to consider this as the equivalent to a single member which is formed from a single strip of aluminum as in the present invention. Further, the structure of Benesh clearly does not show a single member that is positioned adjacent to and along the entire extent of a peripheral edge of the external bottom side of the vessel as does the applicant's invention.

Referring now to the claims, claims 106 and 117 recite a portable heating system that includes a vessel with an external bottom side (or surface in the case of claim 117), and a single thermally conductive member fixedly attached to and positioned adjacent to and along the entire extent of a peripheral edge of the external bottom side (or surface) and having an inner peripheral edge defining an inner diameter and a outer peripheral edge defining an outer diameter, the conductive member having a plurality of undulating protrusions extending downwardly from the external bottom side. For the reasons discussed hereinabove, the applicants believe

that none of the cited references taken individually or in combination, show or suggest such a feature.

The Examiner has said that it would have been obvious to a person having ordinary skill in the art to modify Barnes by fixedly attaching the thermally conductive member to a vessel in view of the teachings of Benesh. The applicants strongly disagree. The structure of the annular ring h of Barnes is that of "twisted wire, wire gauze, iron cuttings or shavings, or other non-flammable material". The material of Benesh is a combination of copper and steel, and the structure comprises members formed of a composite of those materials and extending radially outwardly, with an edge thereof being attached, by welding or the like, to the bottom wall 2 of the kettle. Because of the differences in structure and materials, the applicants do not believe that it is reasonable to conclude that the teachings of Benesh can be applied to the apparatus of Barnes to obtain the applicants invention. This is particularly true since the Barnes reference does not even show a cooking vessel to be combined with the annular ring as proposed by the Examiner.

Also, since the Barnes reference has existed since 1872 and the Benesh reference has existed since 1940, the Examiner's argument of obviousness is not well based. That is, for 65 years the two references have been available to those skilled in the art, and nobody other than the inventors have arrived at the present invention.

The dependent claims recite further distinguishing features such as the particular structure and dimensional characteristics of the single thermally conductive member, the aspect ratio thereof and the manner of attaching to the external bottom side. None of these features are shown or suggested by the any of the cited references taken individually or in combination.

Referring to claims 129 and 140, there is recited a system for heating a substance, and a heating vessel, respectively, which includes similar features as discussed hereinabove, but wherein the conductive member is recited as a series of integrally connected thermally conductive protrusions secured to and positioned adjacent to and along the entire extent of a peripheral edge of the vessel external

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bottom side. Again, for the reasons discussed hereinabove, none of the cited references taken individually or in combination show or suggest such a feature.

Claim 151 recites a portable heating system comprising a vessel, a top housing having a top rim coupled circumferentially to the external bottom side of the vessel, and a bottom housing having a top rim configured to be selectively coupled to the top housing bottom rim and containing a burner, wherein the bottom housing is so configured and sized as to be removable from said top housing and temporarily placed for storage in said vessel cavity. Although the Examiner has said that LaForge teaches this storage feature, the applicants do not believe this to be the case. Further, none of the other cited references show or suggest such a feature.

For the reasons discussed hereinabove, the applicants believe that the claims, as amended, are patentably distinctive over the cited references. A reconsideration of the Examiners rejection and a passing of the case to issue is respectfully requested.

If the Examiner wishes to expedite disposition of the above-captioned patent application, he is invited to contact Applicant's representative at the telephone number below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

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